Technology Opportunity

Hybrid Turbine-Electric Transit Bus

An industry and government cooperative is using aerospace technology in an advanced transit bus that will

- Double the fuel economy
- Lower emissions to one-tenth of EPA standards

Manufacturing methods from this market will also benefit the aerospace industry by lowering the cost of engines for small aircraft.

Potential Commercial Uses

- Automobiles
- Delivery vehicles
- Municipal waste trucks
- School buses
- Shuttle buses

Benefits

Gas turbines offer

- Very low emissions
- High reliability
- Multiple fuel capability

Electric power trains offer

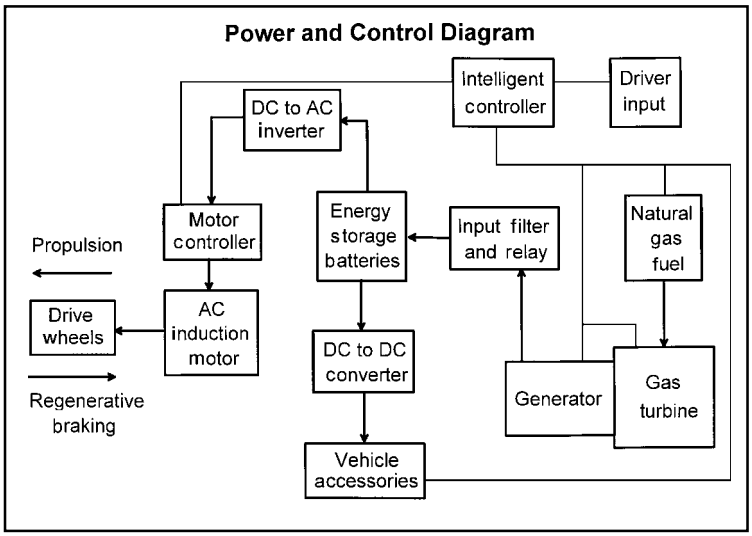
- Recovery of energy during braking
- Smooth and quiet operation
- Elimination of expensive and inefficient automatic transmissions

The Technology

The heart of the vehicle's power system is a natural-gas-fueled turbine developed from an aircraft jet engine. The turbine turns a generator, thereby producing electricity. Power from both the generator and storage batteries is provided to a variable-speed electric motor attached to the rear drive axle. An intelligent power control system determines the most efficient operation of the gas turbine and storage battery system.

Options for Commercialization

Regional transit authorities in the Northeast and California have shown a great interest in fuel-efficient, low- emission transit buses. The industry-government consortium is prepared to fully develop and demonstrate the technologies needed for this



market. The resulting vehicle and power train components will be capable of being manufactured and marketed before the year 2000.

Members of the consortium are

- Cleveland Regional Transit Authority
- Edison Industrial Systems Center
- Howard University
- NASA Glenn Research Center
- State of Ohio, Dept. of Development
- Teledyne Ryan Aeronautical
- The Flxible Corporation

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